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I, JANENE PEISKER, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2004901213 for a patent by BRUCE WILLIAM ROSS as filed on 10 March 2004.

WITNESS my hand this
First day of April 2005

A handwritten signature in cursive script, appearing to read 'J. H. + C.', written in dark ink.

JANENE PEISKER
TEAM LEADER EXAMINATION
SUPPORT AND SALES



P00009
Regulation 3.2

AUSTRALIA

Patents Act 1990

PROVISIONAL SPECIFICATION FOR THE INVENTION ENTITLED:

PHYSICAL TRAINING APPARATUS

This invention is described in the following statement:-

This invention relates to physical training machines and apparatus and more particularly to apparatus for developing and testing the strength and technique of athletes.

For the sake of convenience, the invention will be described in relation
5 to the use of the apparatus in developing the strength and technique of forward players in the sport of rugby union football but it is to be understood that the invention is not limited thereto as it will find application in other sports and activities.

There is a need for a physical training machine which provides
10 measured resistance in a horizontal plane to simulate effectively the body position and dynamic forces encountered in a rugby scrum.

There is also a need for a physical training machine which simulates the muscle contraction and extension provided by the squat exercise but which provides for variable and increasing resistance as the athlete moves from deep
15 contraction of the knee and hip joints to full extension of those joints.

According to one aspect of the invention there is provided a physical training apparatus comprising a main frame having a base which has a front portion and a back portion, an upright portion intermediate the front portion and back portion of the base, a moveable sled slidable with respect to the front
20 portion of the main frame, cable means connected by one of its ends to the sled and extending from the front portion of the base and over the upright portion, a weight connected to the other end of the cable means and positioned above the base of the main frame rearward of the upper portion, the arrangement being such that forward pressure on the sled causes the weight
25 to rise thereby providing resistance to the forward pressure on the sled.

In order that the invention may be more readily understood and put into practical effect, reference will now be made to the accompanying drawings in which:-

- Fig. 1 is a side elevational view of a physical training device according to one embodiment of the invention, and
- Fig. 2 is a front view of the device shown in Fig. 1, and
- Fig. 3 is a partial side elevational view of a physical training device according to another embodiment of the invention.

The physical training device 10 shown in the drawings consists of a main frame 11, moveable sled 12, weight 13 and cable means 14 connected between the sled 12 and the weight 13. The main frame 11 has a front portion 15, and a back portion 16 which collectively constitute the base of the main frame, and an upright portion 17.

The upright portion 17 consists of spaced apart pairs of front upright posts 18 and rear inclined posts 19 connected together at their tops by a cross bar 20 which supports a first pair of spaced apart pulleys 21. The rear post 19 acts as a runner for the axle or bar 22 of the weight 13. At each end of the axle or bar 22 there is a stub axle 23 for carrying weights 24 which may be varied in number as desired.

The base 25 of the main frame, which includes the front portion 15 and the back portion 16 may consist of two inwardly facing C-shaped channel members 26 and 27 connected together at the intermediate portion of the base by cross bars 28.

The sled 12 consists of a framework 30 which includes base side members 31, uprights 32 and braces 33. The uprights 32 each carry a pad 34. At the front and rear of the sled 12 there is a pair of front and rear wheels 35, 36 mounted on base cross-bars 37, 38 connecting the ends of base side

members 31. The wheels 35, 36 run in the channel members 26 and 27 as can be seen in Fig. 2.

At the bottom of the posts 18 there is a second pair of pulleys 40 and at the front of the channel members 26 and 27 there is a third pair of pulleys 41.

5 The cable means 14 consists of a pair of cables 42 and 43 which extend from the weight axle 22 over the first pulleys 21, around the second pulleys 40, the third pulleys 41 and are connected to the front of the sled 12 by connectors 44.

When an athlete pushes against the pads 34, the sled moves forward in the direction of arrow A in Fig. 1 with the cable means then raising the weight

10 13 to provide resistance to the pushing by the athlete. Preferably, the athlete crouches and assumes a position with his back horizontal before pushing against the pads 34. The cables and pulleys convert the vertical resistance of the weight 13 into horizontal resistance against pushing of the sled.

In the embodiment shown in Fig. 3, the front portion of the device (which

15 is not shown) is the same as the front portion of the embodiment shown in Figs. 1 and 2. In this instance, the upright portion 50 consists of a pair of spaced apart pair of rear upright posts 51 and front incline posts 52 connected together at their top by a cross bar 53. The rear posts 51 support moveable quadrant sections 54 hinged at pivot point 55. Also hinged at pivot point 55 are

20 bars 56 which are pinned to the quadrant section 54 through one of a number of holes 57 located around the rim of the quadrant section 54. An axle 58 passes through the ends of the bars 56 and supports the weight plates 59.

The cable means consist of a pair of cables 42 which extend from the base of

25 the quadrant section 54 around the grooved perimeter of the quadrant section then vertically up and over the pulley 60. As before, the cables and pulleys

convert the vertical resistance of the weight 59 into horizontal resistance against pushing of the device.

As the quadrant section 54 and attached weights 59 are raised, the resistive torque increases in the same ratio as the moment arm from the weight axle 58 to the pivot point 55 is increasing. The effect of this is that the machine provides less resistance in the range of motion where the relevant muscles can apply less torque and more resistance where those muscles can exert greater torque.

The various placements of the load bearing arms 56 made possible by inserting pins in any one of the slots 57 provide the athlete with a choice of resistive torque at the start of the exercise movement.

In this embodiment, the variable resistance is achieved by having the cable run around the periphery of the quadrant 54. In a variation, a cam of variable radius could be used to provide specific variation of the resistive torque.

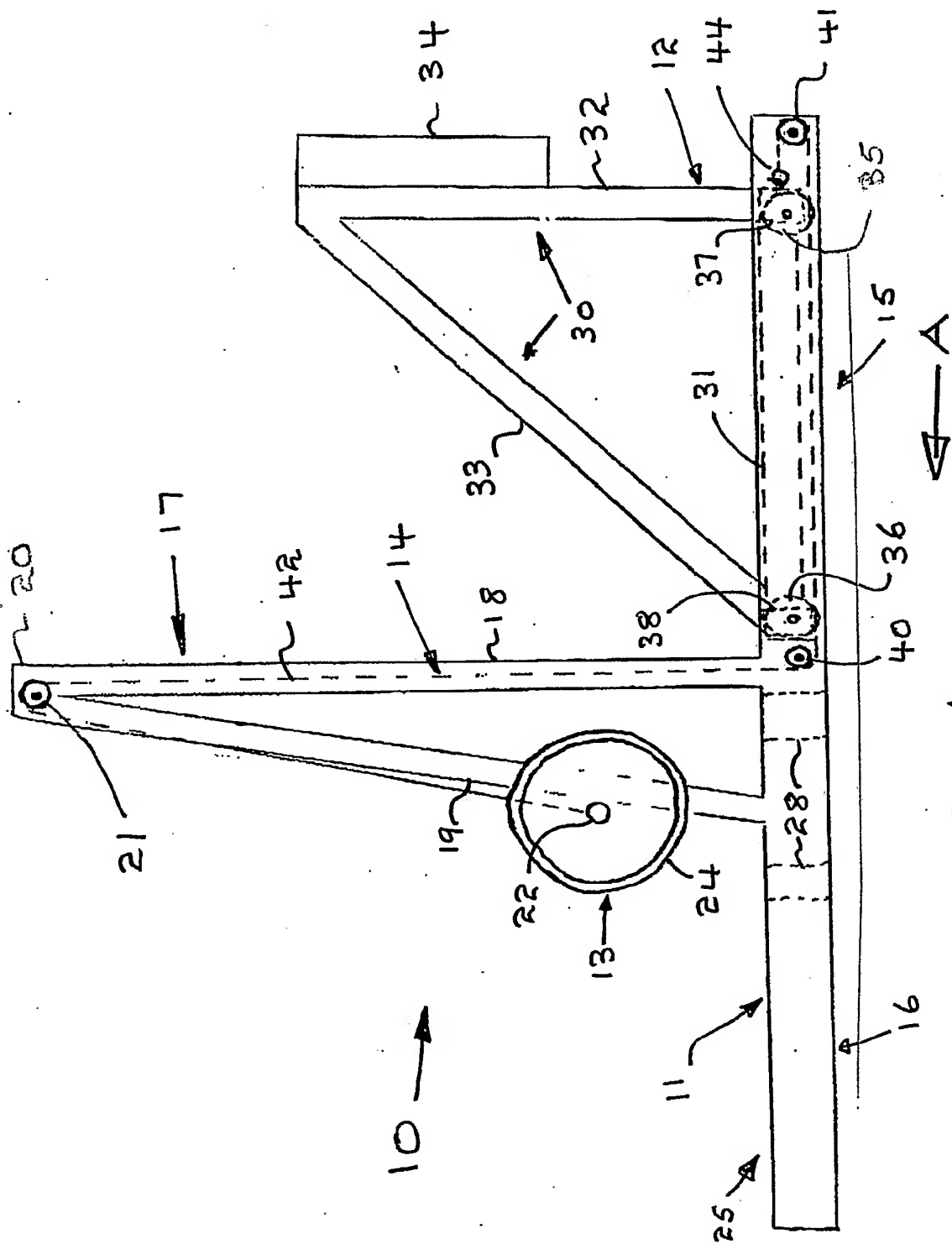
Various other modifications may be made in details of design and construction without departing from the scope and ambit of the invention.

Dated this 9 day of March 2004

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Patent Attorneys for the Applicant

PETER MAXWELL & ASSOCIATES



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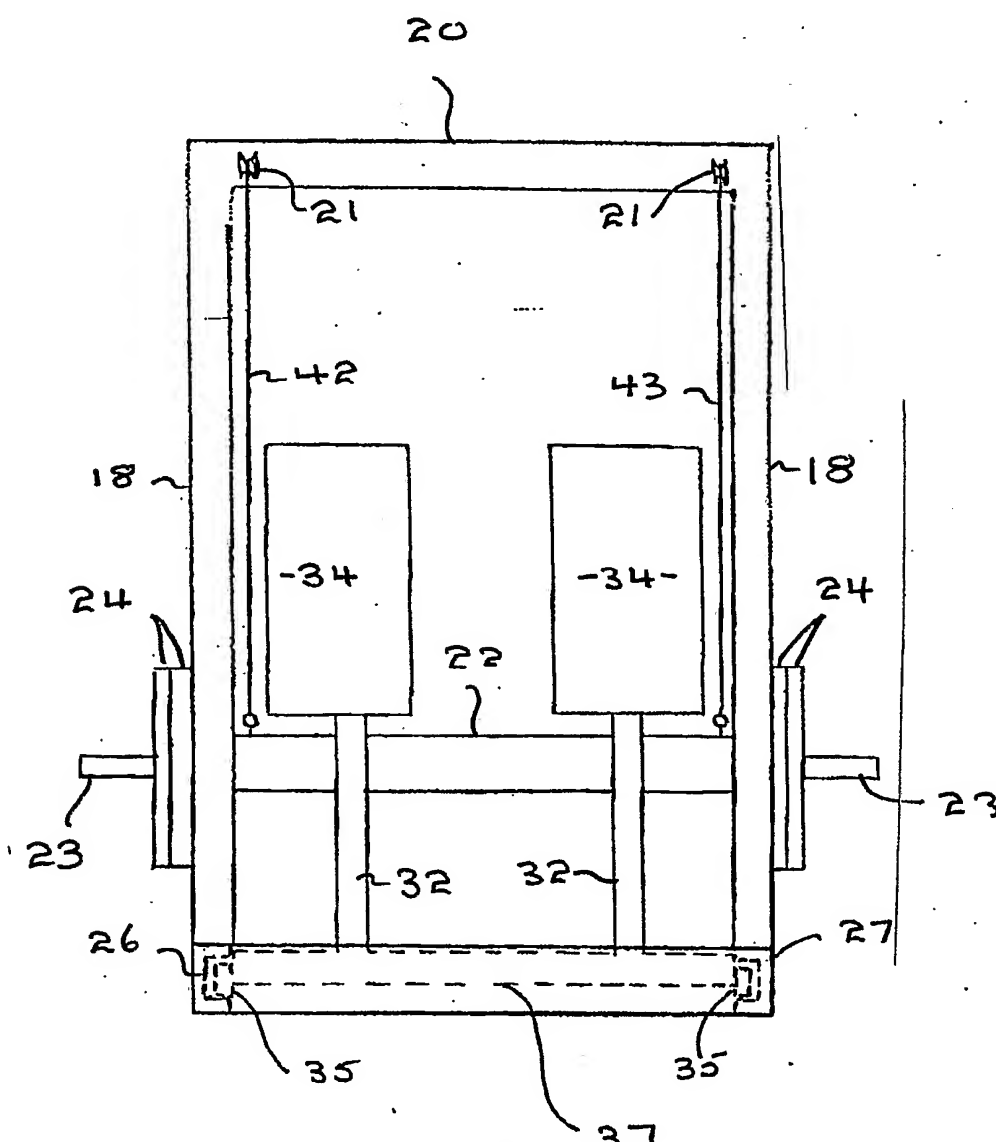


Fig. 2

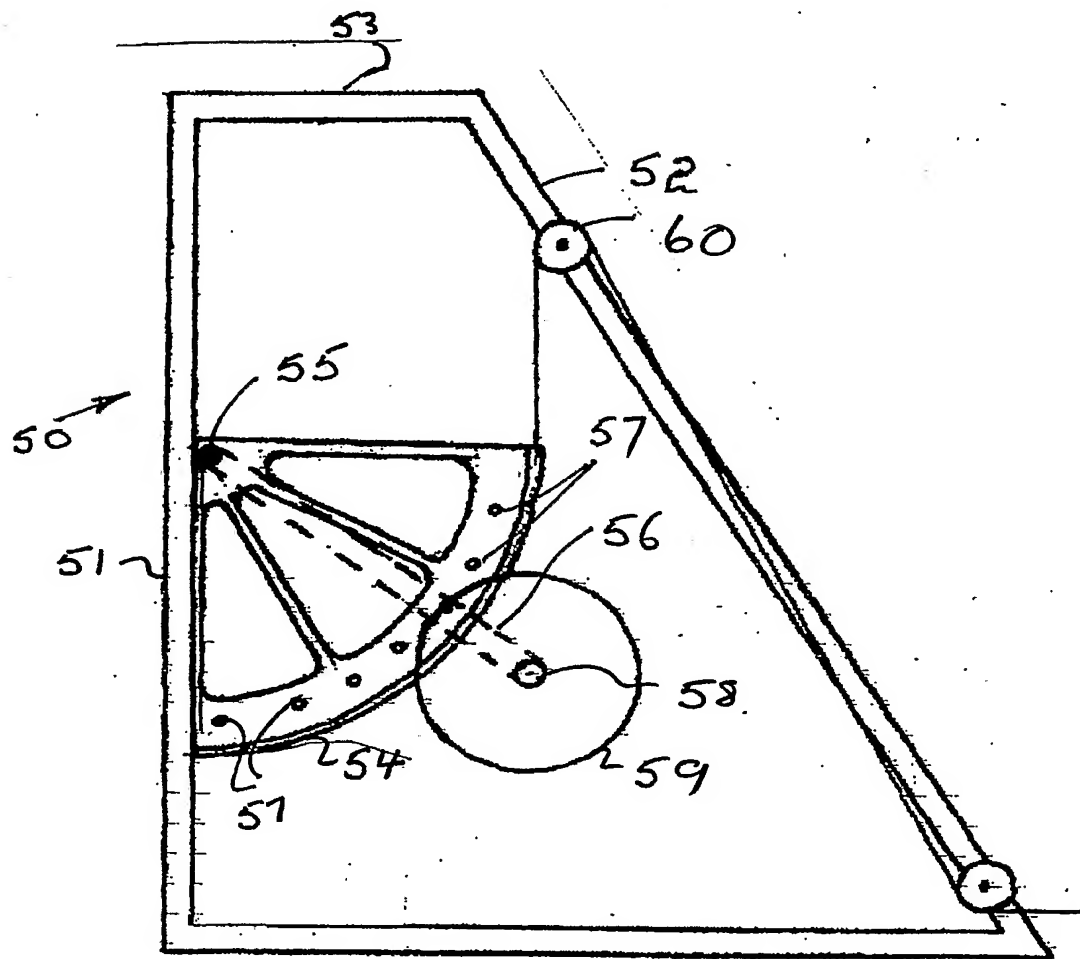


Fig. 3.